CLAIMS:

1. An article made of a magnesium alloy tube, the article having a grain size of between 10μm and 50μm and being manufactured by internal high pressure forming.

2. An article according to Claim 1, wherein the temperature of the internal high pressure forming is between 200°C and 605°C.

3. An article according to Claim 1, wherein the tube was manufactured by extrusion.

4. An article according to Claim 3, wherein the extrusion temperature is between 300°C and 605°C.

5. An article according to Claim 3, wherein the extrusion speed is substantially between 5 mm/sec and 45 mm/sec.

6. An article according to Claim 3, wherein the extrusion reduction ratio is substantially between 10:1 and 50:1.

7. An article according to Claim 3, wherein the extrusion temperature is between 300°C and 605°C, the extrusion speed is substantially between 5 mm/sec and 45 mm/sec, and the extrusion reduction ratio is substantially between 10:1 and 50:1.

8. An article according to any one of the above claims, wherein the magnesium alloy is selected from the group consisting of AZ31 and ZM21.

9. An article according to Claim 8, wherein the extrusion reduction ratio is substantially 30:1, the extrusion speed is substantially 15 mm/sec, the predetermined temperature is substantially 300°C, and the AZ31 alloy is used.

10. An article according to Claim 1, wherein the magnesium alloy comprises 2.856% aluminum, 1.022% zinc, 0.329% manganese, 0.004% iron, 0.038% silicon, 0.001% copper, and 0.001% nickel.

11. An article according to Claim 1, wherein the tube is annealed.

12. An article according to Claim 11, wherein the tube is annealed at a temperature of 300°C for six hours.

13. A process for manufacture of a tube from a billet made of a magnesium alloy, the process comprising:

(a) heating the billet to a predetermined temperature that is within a range of 300°C to 605°;

(b) extruding the billet, using an extrusion press having a ram, an internal piercing mandrel, and a die, while maintaining the temperature of the billet to stay within the range; and

(c) applying a force to the billet so that it is forced between the die and the mandrel at a predetermined extrusion speed of the ram to form a tube having a predetermined extrusion reduction ratio;

wherein the extrusion speed is substantially between 5 mm/sec and 45 mm/sec, and the extrusion reduction ratio is substantially between 10:1 and 50:1.

14. A process according to Claim 13, wherein the magnesium alloy is selected from the group consisting of AZ31 and ZM21.

15. A process according to Claim 14, wherein the extrusion reduction ratio is substantially 30:1, the extrusion speed is substantially 15 mm/sec, the predetermined temperature is substantially 300°C, and the AZ31 alloy is used.

16. A process according to Claim 1, wherein the magnesium alloy comprises 2.856% aluminum, 1.022% zinc, 0.329% manganese, 0.004% iron, 0.038% silicon, 0.001% copper, and 0.001% nickel.

17. A process according to Claim 1, wherein the process further comprises the step of annealing the tube.

18. A process according to Claim 17, wherein the tube is annealed at a temperature of 300°C for six hours.

19. A process according to Claim 13, further comprising the steps of

(d) cooling the tube at a predetermined first cooling temperature for a predetermined amount of time;

(e) sealing the tube from both ends;

(f) introducing a pressure medium into the tube;

(g) positioning the tube in a mold having a guiding zone at a predetermined guiding temperature and an expansion zone of a predetermined shape at a predetermined expansion temperature;

(h) applying an axial compression force on the tube so that a section of the tube located in the expansion zone expands to conform to the predetermined shape; and

(i) cooling the tube at a predetermined second cooling temperature for a predetermined amount of time;

wherein the expansion temperature is within a range of 200°C to 605°.

20. A process according to Claim 19, wherein the expansion temperature is substantially between 200°C and 500°C.

21. A process according to Claim 19, wherein the pressure medium is a gas.

22. A process according to Claim 21, wherein the gas does not react with the metal under the conditions used in the process.

23. A process according to claim 19, wherein the pressure medium is a heat resistant liquid.